

Patent claims

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1. Method for automatically generating software in which the properties of an application made possible by the software are modelled in abstract form and then mechanically converted into software for this
- 10 application, while the execution of the application influences a technical system optionally made up of a plurality of systems, **characterised in that** at least one of the following additional elements is generated in a totally integrated multi-objective form from the
- 15 modelled description of the application together with the application source code or together with the source information suitable for producing this source code, namely:
- software for visualising and/or logging and/or
 - 20 remotely monitoring/operating the application and/or the technical system;
 - software for simulating the application and/or the technical system;
 - software and/or information for communicating
 - 25 within the application and/or with other systems and/or between split systems and
 - documentation for the user and/or the programmer.

2. Method according to claim 1, characterised in that
- 30 in addition to the software for simulating the application, software for counter-simulating the technical system which is influenced by the application is also generated.

- 35 3. Method according to claim 1, characterised in that the application is modelled by one or more modules, additional information and possible instancing tables,

wherein

- one module advantageously contains a partial problem of the application,
 - the additional information contains information
- 5 such as text, images, visualisers and type definitions to which reference is made within the modules, and
- the instancing tables contain information which cannot be deposited directly in the module itself in the event of multiple instancing of the modules and which
- 10 cannot be generated mechanically either, such as hardware addresses, for example.

4. Method according to claim 3, characterised in that a module is totally defined by the following sets of
- 15 definitions:
- node definitions for distributing the application to physically separate hardware systems coupled by data technology (split systems),
 - sub-module definitions for instancing (tying-in)
- 20 sub-modules,
- element definitions for combining all the data as well as hardware and communication inputs/outputs of a module,
 - man-machine interface definitions for defining all
- 25 the components required within a module for producing an interface for the user and
- function definitions consisting of a number of functions of a module.